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PHYCOERYTHRIN SIGNATURES IN THE COASTAL OCEAN

In this presentation we report the results of a four-year study of the relationship between the optical environment and the distribution and spectral properties of phycoerythrin-containing organisms on the continental margin of North America. This work was designed to test the hypothesis that different spectral forms of PE are associated with Case II waters, "blue" Case I waters [Kd(440)<Kd(550)], and "green" Case II waters [Kd(440)>kd(550)]. We examined the abundance of PE-containing organisms, the PE fluorescence signature, the hyperspectral remote sensing reflectance, and a range of other apparent and inherent optical properties at stations in the Gulf of Mexico, Gulf of California, New Jersey shelf, and off the West Coast of North America. For most cruises, we also have hyperspectral observations of ocean color by remote sensing. This talk focuses on the high abundance of PE-containing organisms in Case II waters and nutrient-enriched Case I waters, the fluorescence signatures associated with these communities, and on their relationship to hyperspectral signatures that can be detected by remote sensing.